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**BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**



Application Number: 10/025,925
Filing Date: December 26, 2001
Appellant(s): BEAUDOIN ET AL.

John C. Gorecki
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 5/16/07 appealing from the Office action mailed 8/8/06.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The appellant's statement of the related appeals and interferences contained in the brief is correct. The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

The following is a listing of the prior art of record relied upon in the rejection of claims under appeal.

| | | |
|---|---|---|
| "Visualizing Network Data" | BECKER ET AL | 3-1995 |
| 5,729,250 | BISHOP ET AL | 3-1998 |
| "3D Geographic Network Displays" | COX ET AL | 11-1996 |

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

*Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21-42, 44, and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Becker et al ("Visualizing Network Data", March 1995).

Claims 21-34

2-1. Regarding claim 21, Becker anticipates the claim of a method comprising the steps of presenting a background image representation of at least a first of the aspects of the telecommunication network, said first aspect being a physical network topology of the telecommunication network, by teaching a graphical tool called SeeNet, that visualizes network data using static displays, interactive controls, and animation *[Section I, page 16, paragraph 7, lines 1-3]. [Figure 7]* shows the percentage of idle network capacity into and out of one node near Chicago using SeeNet. As shown, a map of the U.S is displayed in the background along with nodes and links on the map.

Becker teaches presenting a foreground representation of at least a second of the aspects of the telecommunication network over the background image representation, by disclosing that in addition, links with a high percentage of idle capacity (red) are shown above those with a lower percentage of idle capacity. Hence, the higher percentage links are shown in the foreground, and the lower percentage ones, in the background. The user is allowed to adjust the colors representing the links on the display and thus, would have the ability to choose which links would be in the foreground *[Section III, page 20, paragraph 4].*

Becker teaches said second of the aspects comprising at least a management view of the telecommunication network, by disclosing that users can select specific nodes for viewing as well as choose which links would be in the foreground *[Section III,*

*page 20, paragraphs 4, 6]*. Thus, the foreground image representation comprises a management view where users can manage the nodes and links being viewed.

2-2. Regarding claim 22, Becker anticipates the claim of the method wherein the background image representation is generated from an information set associated with the telecommunication network such that the background image representation contains less than a complete visual representation of the telecommunications network topology, by teaching that the background links only represent a portion of the network data that fall within a certain range, as shown by its color *[figure 7]*.

2-3. Regarding claim 23, Becker anticipates the claim of the method wherein the background image representation is a combination of a plurality of unselected views of the telecommunication network and wherein the foreground image representation further comprises at least one selected view of the telecommunication network, by teaching that the background map and links represent the background views and the links having the prominent user selected color represent the foreground view.

2-4. Regarding claim 24, Becker anticipates the claim of the method wherein the step of presenting the foreground image representation comprises displaying the at least one selected view in a distinguishable fashion from the combination of unselected network views forming the background image representation to enable the at least one selected view of the telecommunication network to be viewed in context of information contained

in the background image representation, by teaching that the foreground links have a distinct color. In the case of *[figure 7]*, the color is red.

2-5. Regarding claim 25, Becker anticipates the claim of the method further comprising the step of moving at least one of the unselected views of the telecommunication network from at least one of the background image representation to the foreground image representation, and the step of moving at least one of the selected views of the telecommunication network from the foreground image representation to the background image representation, by teaching that the user can adjust the color as well as the levels of color being displayed *[Section III, pages 19-20]*. This would allow the user to modify which links are in the background and foreground.

2-6. Regarding claim 26, Becker anticipates the method wherein the step of moving is performed upon receipt of input from a user of a network management tool, by teaching that SeeNet allows a user to modify the parameters while continuously providing visual feedback, enabling the adjustment of the parameters to produce informative displays *[Section IV, paragraph 1]*.

2-7. Regarding claim 27, Becker anticipates the method wherein the background image representation is a reference view of a base model representation and wherein the foreground image representation is an overlay view of the base model

representation, by teaching that the map is a reference view and the links are overlaid on top of the map *[figure 7]*.

2-8. Regarding claim 28, Becker anticipates the method wherein the background image representation is grayed out relative to the foreground image representation, by teaching that the links having the lowest percentage of idle capacity in *[figure 7]* are shown in gray.

2-9. Regarding claim 29, Becker anticipates the claim of the method further comprising the step of presenting at least one user-selected logical network topology, by disclosing that the display contains user-selectable links and nodes on a map *[figure 7]*.

2-10. Regarding claim 30, Becker anticipates the claim of the method wherein the background image representation and foreground image representation allow simultaneous displays of representations of multiple network technologies available on the telecommunication network, by teaching a statistic may be raw data or summaries. Link statistics may be directed, as in call flow of a circuit-switched network, or undirected, as in the network's capacity *[Section I, page 16, paragraph 4]*.

2-11. Regarding claim 31, Becker anticipates the claim of the method further comprising the step of enabling a combination of the background and foreground

images to be visible via a Graphical User Interface (GUI) of a network management tool *[figure 7]*.

2-12. Regarding claim 32, Becker anticipates the claim of the method wherein the first aspects and second aspect are user selectable from the plurality of aspects of the telecommunication network via the GUI, by teaching that the user may vary the statistic, levels, geography, topography, time, aggregation, and color parameters of the display *[Section III, page 19-20]*.

2-13. Regarding claim 33, Becker anticipates the claim of the method wherein the first aspect represents physical devices in the telecommunication network and wherein the second aspect represents attributes of the physical devices, by teaching the topology parameter *[Section III, page 19]* and that network data may be categorical, such as the type of node or link, or quantitative, such as a link's capacity *[Section I, page 16, paragraph 4]*.

2-14. Regarding claim 34, Becker anticipates the claim of the method wherein the foreground image representation is a composite of multiple individual representation of one or more of the aspects of the telecommunication network, by teaching that the display shows multiple nodes on a map with links interconnecting them *[figure 7]*. The multiple nodes represent the one or more aspects of the telecommunication network.

Claims 35-42

2-15. Regarding claim 35, Becker anticipates the claim of a network management tool comprising a Graphical User Interface available via a window on a display, said user interface being configured to provide the network manager with an ability to simultaneously display a reference view of a managed telecommunication network, said reference view describing at least a portion of a physical network topology of the managed telecommunication network, by teaching a graphical tool called SeeNet, that visualizes network data using static displays, interactive controls, and animation *[Section I, page 16, paragraph 7, lines 1-3]. [Figure 7]* shows the percentage of idle network capacity into and out of one node near Chicago using SeeNet. As shown, a map of the U.S is displayed in the background along with nodes and links on the map.

Becker teaches an overlay view of the managed telecommunication network in a distinguishable fashion in said window, by teaching that in addition, links with a high percentage of idle capacity (red) are shown above those with a lower percentage of idle capacity. The links with the higher percentage are overlaid on top of the map as well as the links with the lower capacity. The user has the ability to adjust which links are displayed by varying the parameters *[Section III, pages 19-20].*

Becker teaches said user-selectable overlay view describing at least a management view of the managed telecommunication network, by disclosing that users can select specific nodes for viewing as well as choose which links would be in the foreground *[Section III, page 20, paragraphs 4, 6].* Thus, the foreground image

representation comprises a management view where users can manage the nodes and links being viewed.

2-16. Regarding claim 36, Becker anticipates the claim of the tool wherein the reference view and overlay view together comprise a plurality of user selectable aspects of the managed telecommunication network, and wherein the GUI is configured such that the user may choose which aspects should be used to generate at least one of the reference view and the overlay view, by teaching that the user may vary the display by choosing the static, levels, geography, topography, time, aggregation, and color *[Section III, pages 19-20]*.

2-17. Regarding claim 37, Becker anticipates the claim of the tool wherein the overlay view is displayed in relief relative to the reference view, by teaching that the user may vary the color and thickness of lines *[Section III, page 20, "Size"]*. Thus, the links would show up in relief to the reference view *[figure 7]*.

2-18. Regarding claim 38, Becker anticipates the claim of the tool wherein the reference view is a view of a base model representation of a network layout containing information about network devices and attributes of the network devices, by teaching that the color may be used to encode statistic values on the display *[Section III, page 20, "Color"]*. The base model representation may be the links that contain only certain

attributes or that may be in a certain geographical location. Thus, the reference view contains information and attributes of the network devices represented by the nodes.

2-19. Regarding claims 39-41, Becker anticipates the claim of the tool wherein the base model representation is generated from a network information set containing complete information about the underlying telecommunication network, because the base information set would inherently need to be complete, in the sense that it contains all the information necessary to display all the variations based on the parameters selected, in order to allow for the modification on each parameter within the display.

Becker anticipates the claim of the tool wherein the base model representation represents less than all of the information contained in the network information set, by teaching that the user can modify the statistics, levels, geography, topography, time, aggregation, and color to change the display *[Section III, pages 19-20]*.

2-20. Regarding claim 42, Becker anticipates the claim of the tool wherein the network information set comprises physical topography information associated with network elements on the telecommunication network, by teaching topography as one of the parameters *[Section III, page 19, "Geography/Topology"]*.

Becker anticipates the network information set comprising logical interconnection information, status information, and performance attributes associated with the telecommunication network, by teaching that the links on the map represent a statistic being displayed *[figure 7]*. Statistics may be raw data or summaries. Link statistics may

be directed, as in call flow of a circuit-switched network, or undirected, as in the network's capacity *[Section I, page 16, paragraph 4]*.

Claims 44, 46

2-21. Regarding claim 44, Becker anticipates the claim of the method for presenting a visual representation of a telecommunication network layout comprising the step of obtaining an information set containing information relevant to the telecommunication network layout, because the base information set would inherently need to contain all the information necessary to display all the variations based on the parameters selected, in order to allow for the modification on each parameter within the display.

Becker anticipates the method comprising the step of generating a representation of at least a portion of the information set, said representation having a background image portion indicative of at least a first aspect of the telecommunication network layout, said background image being derived from at least a first data subset of the information set and representing at least a portion of a physical network topology of the telecommunication network layout, by teaching a graphical tool called SeeNet, that visualizes network data using static displays, interactive controls, and animation *[Section I, page 16, paragraph 7, lines 1-3]. [Figure 7]* shows the percentage of idle network capacity into and out of one node near Chicago using SeeNet. As shown, a map of the U.S is displayed in the background along with nodes and links on the map.

Becker teaches said representation having a foreground image indicative of at least a second aspect of the telecommunication network layout, said foreground image

being user-selectable and derived from at least a second data subset of the information set, by disclosing that in addition, links with a high percentage of idle capacity (red) are shown above those with a lower percentage of idle capacity. Hence, the higher percentage links are shown in the foreground, and the lower percentage ones, in the background. The user is allowed to adjust the colors representing the links on the display and thus, would have the ability to choose which links would be in the foreground *[Section III, page 20, paragraph 4]*.

Becker teaches said foreground image including a management view of the telecommunication network, by disclosing that users can select specific nodes for viewing as well as choose which links would be in the foreground *[Section III, page 20, paragraphs 4, 6]*. Thus, the foreground image representation comprises a management view where users can manage the nodes and links being viewed.

2-22. Regarding claim 46, Becker anticipates the claim of the method wherein at least one of the first and second data subsets are user selectable to enable a user to control the appearance of at least one of the foreground image and background image, by teaching that the user may vary the statistic, levels, geography, topography, time, aggregation, and color parameters of the display *[Section III, page 19-20]*. By varying these parameters, the user can control which links are shown in the foreground and which are shown in the background.

*Claim Rejections - 35 USC § 103*

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 43 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al ("Visualizing Network Data", March 1995) and Bishop et al (U.S. Patent No. 5,729,250).

4-1. Regarding claim 43, Becker teaches the invention substantially as claimed. See section 2-15. Becker does not expressly teach using a display that is touch sensitive and acts as an input device. Bishop teaches that an advantage of a touch screen is that an operator may simply touch a display object or portion of the display screen to select, highlight, or otherwise input information *[column 1, lines 30-33]*. Thus, no intermediate device such as a mouse is required.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the graphical tool of Becker, the touch sensitive display as taught by Bishop. This would allow the operator to simply touch a display object or portion of the display screen to select, highlight, or otherwise input information and thus, eliminating the need for an intermediate device such as a mouse.

5. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al ("Visualizing Network Data", March 1995) and Cox et al ("3D Geographic Network Displays", November 1996).

5-1. Regarding claim 45, Becker teaches the invention substantially as claimed. See section 2-21. Becker further teaches that the user may vary the color of links to highlight important data (Section III, page 20, "Color"). Becker does not expressly teach the claim of the method wherein the background image is presented in a dilute color format and wherein the foreground image is presented in a saturated color format. Cox teaches a similar graphical tool for displaying a network layout that positions nodes geographically on a globe and draws lines or arcs among them *[section 2.1, paragraph 1, lines 1-2].* "The color and thickness of lines may be used to represent the traffic, with the thicker and brighter lines showing the links carrying the most traffic, with the greatest capacity, and so forth" *[section 1, paragraph 7, lines 6-9].* Thus, the lines between the nodes that carry little traffic may be represented by a dilute color and the lines that carry a lot of traffic may be represented by a more saturated color.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the graphical tool of Becker, being able to modify the brightness of the colors representing the links, as taught by Cox. This would allow the user to better represent the statistic being shown in the network display.

**(10) Response to Argument**

Claims 21-42, 44, and 46

Regarding the rejection of claim 21, Appellant argues, "... Becker's map is not a physical network topology of the telecommunications network as that phrase is used in the claims" *[Claims 21-42, 44, and 46, page 9/17, lines 15-17, of the brief]*. Contrary to Appellant's argument, the statement, "A global network generally consists of nodes and links, which describe the network topology..." *[Specification, page 1, lines 12-13]* does not define the term topology as having both nodes and links that interconnect those nodes. Thus, since Appellant's specification does not define the term "physical network topology", the term may be read broadly. Additionally, nowhere in the claim recites that the nodes and connections of a physical network topology must be displayed. The claim only recites presenting a background image representation of... a physical network topology. Therefore, since the user may display an appropriate subset of data, based upon network geography/topology *[Becker, Section III Parameter Focusing, page 19, paragraph 5, "Geography/Topology"]*, the selected geography/topology of the map as shown may represent a selected physical network topology. As such, the nodes and interconnected lines on the map may represent a foreground image, both of which are user-selectable based on selected parameter values *[Becker, Section III Parameter Focusing, pages 19-20, paragraph 5, "Statistic", "Levels", "Geography/Topology", "Time", "Aggregation", "Size", "Color"]*. The nodes and links may represent a value of a statistic *[Becker, Section I Introduction, page 16, paragraph 4]*.

Appellant argues, "The nodes... of Becker, are actually shown in the foreground rather than the background and, as such, cannot be considered part of a background

image representation" *[Claims 21-42, 44, and 46, page 9/17, lines 27-30, of the brief]*. However, as stated above, the map itself may represent the physical network topology. Additionally, nodes may represent a variety of statistics, each with a visual characteristic such as size, shape, and color of the glyph coding the value of the statistic *[Becker, Section B Nodemaps, page 18, paragraph 1]*. Since the user may adjust parameter values that control the display of certain statistics on the map *[Becker, Section III Parameter Focusing, page 19, paragraph 2]*, some nodes may overlap others. Thus, those nodes shown on the bottom with or without the map may represent a background image, and those shown on top may represent a foreground image.

Appellant argues that Becker, "... does not show the links interconnecting those nodes" and "Since the term 'network topology' includes both nodes and links, applicants respectfully submit that Becker does not teach or suggest the display of a physical network topology as that term is defined in this application" *[Claims 21-42, 44, and 46, page 10/17, lines 18-21, of the brief]*. However, as stated above, Appellant's specification does not define the term "physical network topology", and thus, the term may be read broadly. Additionally, nowhere in the claim recites that the nodes and connections of a physical network topology must be displayed. The claim only recites presenting a background image representation of... a physical network topology. Therefore, since the user may display an appropriate subset of data, based upon network geography/topology *[Becker, Section III Parameter Focusing, page 19, paragraph 5, "Geography/Topology"]*, the selected geography/topology of the map as shown may represent a selected physical network topology. As such, the nodes and

interconnected lines on the map may represent a foreground image, both of which are user-selectable based on selected parameter values *[Becker, Section III Parameter Focusing, pages 19-20, paragraph 5, "Statistic", "Levels", "Geography/Topology", "Time", "Aggregation", "Size", "Color"]*. The nodes and links may represent a value of a statistic *[Becker, Section I Introduction, page 16, paragraph 4]*.

Appellant argues that Becker fails to anticipate the claims because, "... the lines in the background are not used to show the network topology" *[Claims 21-42, 44, and 46, page 11/17, lines 10-12, of the brief]*. However, as stated above, the term "physical network topology" is not defined in the Appellant's specification and thus may be read broadly. Thus, the map itself may represent the physical network topology. Additionally, the important links within the map may be displayed on top of others so that they are more apparent to the user *[Becker, Section A Link Maps, pages 17-18, paragraph 4]*. Thus, less prominent links shown in relation to the map may represent a background image while the more prominent links shown on top may represent the foreground image. One may also interpret the map of Becker and all lines connecting the nodes as representing a background image while the nodes as shown in *[Becker, figure 7]* may represent a foreground image.

Appellant argues that "... even if Becker does show different layers of lines, Becker does not use the different layers to show the different aspects as recited in independent claim 21" *[Claims 21-42, 44, and 46, page 11/17, lines 14-15, of the brief]*. Contrary to Applicant's arguments, the lines in Becker are used to represent a variety of statistics based on its location on the map, size, and color *[Becker, Section III*

*Parameter Focusing, pages 19-20, paragraph 5, "Statistic", "Levels", "Geography/Topology", "Time", "Aggregation", "Size", "Color"].* Thus, a first and second aspect of the network is shown using the lines.

Appellant argues "... the amount of available capacity on the network is not a 'management view' of the network topology" *[Claims 21-42, 44, and 46, page 11/17, lines 16-17, of the brief].* Contrary to Applicant's arguments, the term "management view" may be broadly interpreted. The available capacity on the network may be considered a management view because a user may use the information to manage the network. Additionally, a variety of statistics may be represented by the lines *[Becker, Section I Introduction, page 16, paragraph 4].*

There are multiple ways to interpret the map, nodes, and interconnected lines of Becker in which to read upon claim 21. The map itself may be the background image with either all the nodes and/or all the interconnected lines as the foreground image, the background nodes with/without the map may be the background image with the foreground nodes as the foreground image, the background lines with/without the map may be the background image with the foreground lines and/or all the nodes as the foreground image, and all the interconnected lines with/without the map may be the background image with all the nodes as the foreground image. Consequently, and given the broadest, most reasonable interpretation of their claim language, Becker is still considered to anticipate claim 21.

Claims 43 and 45

Applicant states that dependent claims 43 and 45 recite all the limitations of the independent claims, and thus, are allowable in view of the remarks set forth regarding independent claim 21. However, as discussed above, Becker is considered to teach claim 21, and consequently, claims 43 and 45 are rejected.

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Alvin H. Tan
August 28, 2007

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